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G 8563

Reg. No.....

Name.....

M.Sc. (MEDICAL BIOCHEMISTRY) DEGREE EXAMINATION, AUGUST 2026

Second Semester

PRINCIPLES OF BIOPHYSICAL CHEMISTRY

(2025 Admission - Regular/2024-20 Admissions - Supplementary/2019 Admission-
First Mercy Chance/2018 Admission - Second-Mercy Chance/2016-17 Admission -
Final Mercy Chance)

Time : Two Hours and a Half

Maximum Marks : 80

Answer all questions.

Draw diagrams wherever necessary.

- I. Explain the physical and chemical properties of water. Write about buffers and their importance (20)
- II. Explain how pH can be determined by titrimetric and colorimetric methods. (10)
- III. Describe dialysis and ultrafiltration and their biological significance. (10)
- IV. Write short notes on :
 - 1 Classification of colloids.
 - 2 Determination and biological implications of surface tension.
 - 3 Viscosity and hydrotrophy.
 - 4 Adsorption and partition coefficient.
 - 5 Biological importance of dipole moment.
 - 6 Van't Hoffs law of osmotic pressure.
 - 7 Ionization and dissociation constants.
 - 8 Henderson-Hasselbalch equation.

(8 × 5 = 40)





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M.Sc. (MEDICAL BIOCHEMISTRY) DEGREE EXAMINATION, AUGUST 2026

Second Semester

BASIC LABORATORY PRINCIPLES AND PROCEDURES

(2025 Admission - Regular/2024-20 Admissions - Supplementary/2019 Admission-
First Mercy Chance/2018 Admission - Second Mercy Chance/2016-17 Admission -
Final Mercy Chance)

Time : Two Hours and a Half

Maximum Marks : 80

Answer all questions.

Draw diagrams wherever necessary.

- I. Explain general principles and applications of colorimetry, spectrophotometry, turbidimetry, and nephelometry. (20)
- II. Describe different types and care for centrifuges and incubators. (10)
- III. Explain different types of blood specimens and methods for collection of blood. (10)
- IV. Write short notes on :
 - 1 Cleaning of volumetric equipment.
 - 2 Calibration of spectrophotometer and colorimeter.
 - 3 Types of weighing balances.
 - 4 Plasticware used in laboratory.
 - 5 End-point versus kinetic methods of assay.
 - 6 Calibration of pipettes.
 - 7 Primary and secondary standards.
 - 8 Types of water used in laboratory.

(8 × 5 = 40)





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M.Sc. (MEDICAL BIOCHEMISTRY) DEGREE EXAMINATION, AUGUST 2026

Second Semester

BIOLOGICAL CHEMISTRY

(2025 Admission - Regular/2024-20 Admissions - Supplementary/2019 Admission-
First Mercy Chance/2018 Admission - Second - Mercy Chance/2016-17 Admission -
Final Mercy Chance)

Time : Two Hours and a Half

Maximum Marks : 80

Answer all questions.

Draw diagrams wherever necessary.

- I. Explain protein structure with diagrams. How can we determine the molecular weight of proteins (20)
- II. Explain the structure of B and Z DNA. (10)
- III. With illustrations, explain the molecular organization of a eukaryotic cell. (10)
- IV. Write short notes on:
 - 1 Fluid Mosaic Model and membrane transport.
 - 2 Bacterial cell wall.
 - 3 Structure and functions of mRNA and tRNA.
 - 4 Polyunsaturated fatty acids.
 - 5 Role of carbohydrates in cell recognition and cell-cell interactions.
 - 6 Methods for separation of amino acids and peptides.
 - 7 Classification and biological properties of lipids.
 - 8 Deficiency manifestations of vitamins.

(8 × 5 = 40)

